GLOBAL FIELD ISOMORPHISMS

HARRY J. SMIT

A global field is either a finite extension of the rational numbers or a function field of an algebraic curve over a finite field. These global fields are central objects in both algebraic and analytic number theory. Finding a sufficient condition for an isomorphism between global fields has proven to be a difficult task.

A reason for this is that many invariants of a global field either do not provide sufficient information, or they are difficult to understand or compute. We discuss a number of these invariants that have been studied before. Subsequently, we present recent work in which we show that, using a combination of some understandable invariants, it is possible to determine the isomorphism type of the underlying global field.